

**Notice of Allowability**

Application No.

10/687,681

Applicant(s)

CHEN, MEI

Examiner

Greg F. Cunningham

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application received 10/17/2003.
2. ☒ The allowed claim(s) is/are 1-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

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### DETAILED ACTION

1. This action is responsive to communications of application received 10/17/2003.
2. The disposition of the claims is as follows: claims 1 - 18 are pending in the application. Claims 1 and 10 are independent claims.
3. The group and/or Art Unit location of your application has changed. To aid in the correlation of any papers for this application, all further correspondence should be directed to Group Art Unit 2624 (effective 03/07). Please be sure to use the most current art unit number on all correspondence to help us route your case and respond to you in a timely fashion.

### *Examiner's Amendment*

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Eileen Lehmann (Registration No. 39,272) on 3/27/2007.

The application has been amended as follows:

- A. Change claims 1 and 10, line 7 from:
  - frame movements of said component over said plurality -to now read as:
  - frame movements of said stationary component over a plurality -

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B. Change claims 1 and 10, line 10 from:

- choosing a reference frame, said frame having -

to now read as:

- choosing a reference frame, said reference frame having -

C. Change claims 1 and 10, line 19 from:

- adjacent said test frame, said frames defining a -

to now read as:

- adjacent said test frame, said at least one additional frame and said test frame defining a -

D. Change claim 1, line 33 and claim 10, line 27 from:

- shifting the position of said image with -

to now read as:

- shifting the position of the image associated with said test frame and image shift value with -

***Allowable Subject Matter***

5. Claims 1-18 are allowed.

6. The following is an examiner's statement of reasons for allowance: Applicant's independent claims 1 and 10 provide for removing undesired motion from a sequential plurality of related images, each of such images including a stationary component and being fixed within a frame of uniform dimension, said method comprising the steps of: determining a plurality of sequential inter-frame movements of said component over said plurality of frames, each of said inter-frame movements being associated with one of said plurality of frames; choosing a reference frame, said frame having an associated inter-frame movement; measuring the

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difference between each of said inter-frame movements and the inter-frame movement associated with said reference frame; choosing an image shift parameter; choosing a smoothing filter; designating a test frame; selecting at least one additional frame adjacent said test frame, said frames defining a sample; applying said smoothing filter to the difference values of said sample to obtain a filtered difference value; subtracting the difference associated with said test frame from said filtered value to obtain an image shift value; comparing said image shift value to said image shift parameter; adjusting the number of frames of said sample in accordance with said comparison; calculating said image shift value on the basis of said adjusted number of frames of said sample; shifting the position of said image with respect to said test frame by said image shift value; designating the next frame of said sequence as said test frame.

The closest related art "Video Stabilization Using Linear Consistency Models" makes use of  $n$  frames at a time and estimates the motion between all possible image pairs and solves a set of linear equations using total least squares approach, unlike the process carried out by independent claims 1 and 10, delineated supra.

Therefore as claimed by the combined elements of independent claims 1 and 10, the cited reference and prior art of record lack separately and in combination the elements of said claims. Claims 2-9 and 11-18 depend from allowable independent claims 1 and 10, respectively, and therefore are also allowed.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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*Responses*

8. Responses to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231. If applicant desires to fax a response, (703) 872-9306 may be used for formal communications.

*Inquiries*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory F. Cunningham whose telephone number is (571) 272-7784.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**MATTHEW C. BELLA**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**



**Gregory F. Cunningham**  
**Examiner, Art Unit 2624**

gfc

3/27/2007